

Difference Between scanf and gets

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Key Difference - scanf vs gets

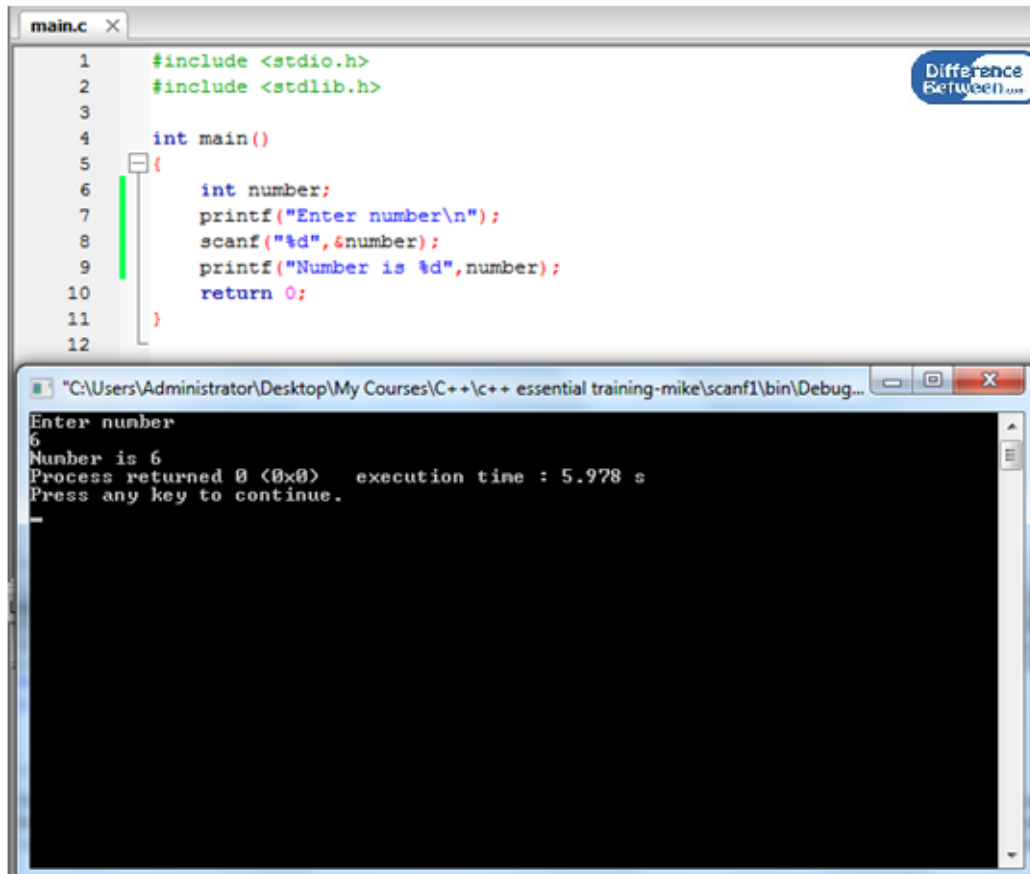
A function is a set of statements to perform a specific task. Without writing all statements in the same [program](#), it can be divided into multiple functions. In programming, the user can define his own functions. There are also functions provided by programming languages. [C language](#) provides a number of functions, so the programmer can use them directly without implementing them from the beginning. Two such functions provided by C language are scanf and gets. This article discusses the difference between these two functions. **The key difference between scanf and gets is that scanf ends taking input upon encountering a whitespace, newline or End Of File (EOF) whereas gets considers a whitespace as the part of the input string and ends the input upon encountering newline or EOF.**

What is scanf?

The scanf function can read input from [keyboard](#) and stores them according to the given format specifier. It reads the input till encountering a whitespace, newline or EOF. The syntax is as follows.

```
scanf("format string", list of address of variables);
```

Refer the example given below to understand scanf.



```
main.c X
1  #include <stdio.h>
2  #include <stdlib.h>
3
4  int main()
5  {
6      int number;
7      printf("Enter number\n");
8      scanf("%d",&number);
9      printf("Number is %d",number);
10     return 0;
11 }
12
```

Output window: "C:\Users\Administrator\Desktop\My Courses\C++\c++ essential training-mike\scanf1\bin\Debug..."

```
Enter number
6
Number is 6
Process returned 0 (0x0)   execution time : 5.978 s
Press any key to continue.
```

Figure 01: scanf with one input

According to the above program, the input getting from the keyboard is an integer, so the format specifier is %d. If it is getting a character value, the format specifier is %c. If getting a floating-point value, the format specifier is %f. The received input value should be stored in the number variable. Therefore, the address of variable number is passed into the scanf function. Now the number variable contains the value given by the user from the keyboard. Finally, we can print the number variable to check the value.

It is also possible to receive more than one value at a time.

```
1  #include <stdio.h>
2  #include <stdlib.h>
3
4  int main()
5  {
6      int number1, number2;
7      printf("Enter values for number1 and number2\n");
8      scanf("%d %d",&number1,&number2);
9      printf("number1 is %d and number2 is %d\n",number1,number2);
10     return 0;
11 }
12
```

```
"C:\Users\Administrator\Desktop\My Courses\C++\c++ essential training-mike\scanf2\bin\Debug...
Enter values for number1 and number2
4 6
number1 is 4 and number2 is 6
Process returned 0 (0x0)   execution time : 3.791 s
Press any key to continue.
```

Figure 02: scanf with multiple inputs

The received inputs are stored in variable number1 and number2. Values can be checked by using printf.

What is gets?

gets function is using to receive input from the keyboard till encountering a newline or EOF. The whitespace is considered as a part of the input. The syntax for gets function is as follows.

```
gets("where to store the string");
```

If there is an error when receiving the string, the gets function will return a null value.

Refer the below example,

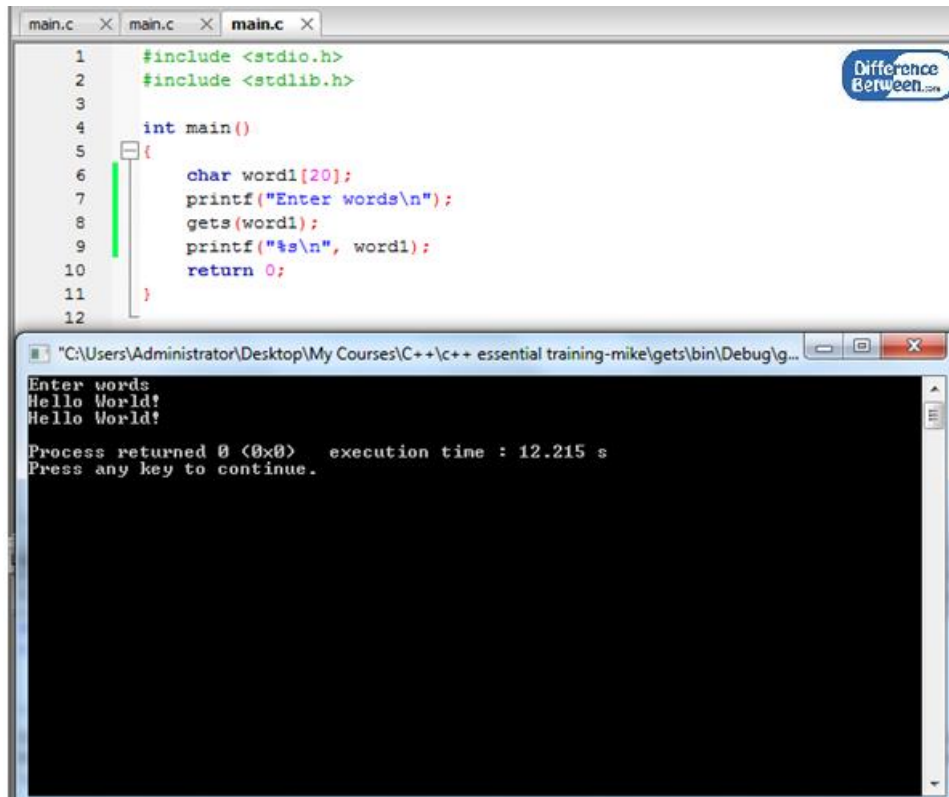


Figure 03: gets

The input is received by the gets function and stored in variable word1. If the programmer used scanf instead of gets and input a string such as “hello world”, scanf will read the string as two strings because of the whitespace. But gets will read it as one string “hello world”.

What are the Similarities Between scanf and gets?

- Both are functions provided by C programming language.
- Both should include header file stdio.h to use these functions.
- Both can be used to get input from the standard input.

What is the Difference Between scanf and gets?

scanf vs gets	
scanf is a C function to read input from the standard input until encountering a whitespace, newline or EOF.	gets is a C function to read input from standard input until encountering a newline or EOF. It considers whitespace as a part of the

	input.
Syntax	
scanf function takes the format string and list of addresses of variables. e.g. scanf(“%d”, &number);	gets function takes the name of the variable to store the received value. E.g. gets(name);
Flexibility	
scanf can read multiple values of different data types.	gets() will only get character string data.

Summary - scanf vs gets

scanf and gets are functions provided by the programming language C. User does not need to implement these functions from the beginning. They can directly use them in their programs. The difference between scanf and gets is that, scanf ends taking input upon encountering a whitespace, newline or End Of File (EOF) and gets considers a whitespace as the part of the input string and ends the input upon encountering newline or EOF. Using scanf or gets depends on the way to receive user input from the standard input which is the keyboard most of the time. scanf is more flexible than gets.

Reference:

- 1.LearningLad., 'Scanf() Function in C Programming Language Video Tutorials' YouTube, YouTube, 23 Apr. 2013. [Available here](#)
- 2.LearningLad,'gets() String Input Function in C Programming Language Video Tutorial',YouTube, YouTube, 6 May 2013. [Available here](#)

How to Cite this Article?

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